Software for Environmental Awareness

Exploring new waters: Great Lakes Adventure

Great Lakes Adventure

This program is a first in several ways: it's aimed at a youth audience (grades 9-12), it will run on both Wintel and Mac computers, and it comes in Teacher and Student versions.

Take a virtual tour of the Great Lakes. Explore some of the environmental issues facing Great Lakes communities today. Investigate the natural history of the basin, the water cycle, stratification and turnover of the lakes. Explore six Hot Topics:

- Habitat loss
- Beach closures
- Fish communities
- Toxics
- Exotic Species
- Eutrophication

You can visit the EPA's research vessel Lake Guardian, deck by deck with virtual reality panoramas. The tour includes the ship's state of the art scientific equipment for monitoring and analysis.

Once you've explored a bit, assume the role of a scientist to solve an environmental mystery. You'll have free run of the Lake Guardian's sampling equipment and labs. You'll want to bring your research journal to help you field some tough questions at the final press conference!
[1999, Win 95 or Mac, www.epa.gov/seahome/gladvent.html]

Titles Recently Adapted for the Web

- UIC Injection Wells
- Lead in the Environment
- Onsite Waste Disposal with Septic Systems
- Private Water Education System
- Fertilizer Storage & Handling
- Pesticide Storage & Handing
- Livestock Manure Storage
- Decentralized Onsite Management for Treatment of Domestic Wastes

Water Quality Standards & Criteria

Water quality standards (WQS) provide a framework for maintenance and improvement of water quality when adopted by States, U.S. Territories, and Indian Tribes. This software presents the three components of State and Tribal water quality standards:

- waterbody uses (e.g. swimming, boating)
- water quality criteria or limits on chemical concentrations that may be present the waterbody
- antidegradation policy to protect existing water quality

Relevant sections of the Clean Water Act are included, along with information on use attainability analysis, the submittal/approval process, implementation, and public involvement. Includes examples.
[1999, Windows 3.1 or Win 95, 8.5Mb, www.epa.gov/seahome/wqs.html]

Water-Effect Ratio for Metals

Based on EPA's 1994 "Interim Guidance on the Determination and Use of Water-Effect Ratios (-WERs) for Metals." The WER procedure is one of three protocols which may be used to derive site-specific water quality criteria for the protection of aquatic life. An overview, two methods for determining WERs, a checklist, the Guidance document. This title is a companion to the Water Quality Standards and Criteria software program.

This software program assumes that the user has an understanding of water quality standards and criteria, as well as scientific methods.
[1999, Windows 3.1 or Win 95, 7.0Mb, www.epa.gov/ seahome/wqs.html]

A Word About the HTML Software...

The SEA team is proud to expand its offering of cross-platform programs. They've been written in HTML, so you can access them from our website (www.epa.gov/seahome). You can also download them and run them on your own computer. Whether you use a Mac, a PC, or a UNIX platform, you can access these programs using your favorite Web browser.

EPA Grant Writing Tutorial

If you're considering applying for an EPA grant, this interactive HTML software tool could make the process a little easier. It walks users through the grant writing process and helps them learn to write more competitive grants. The program includes:

- detailed information and tips on writing a grant proposal;
- how to complete a grant application package (including detailed directions for the forms);
- program-specific sections on three EPA grant programs:
  - Environmental Justice
  - Environmental Justice Through Pollution Prevention
  - Environmental Education
- examples of good, complete grant packages;
- references;
- a glossary of terms;
- resources and contacts;
- a mock grant-writing activity where users are able to compare their results to a successful grant application.

[1998, HTML, 4.1Mb, www.epa.gov/seahome/ grants.html]

Mercury in Medical Facilities

This program teaches health care professionals (and anyone else) about the hazards of mercury as commonly used in medical care facilities, especially hospitals and clinics. Mercury can pose a significant health problem for these professionals, and also for patients and the environment in general. The program explains the impact of mercury on human health and the integrity of ecosystems, and a 'virtual hospital' allows users to see sources of mercury and their alternatives. Detailed survey and self-audit

materials are provided, along with case studies from the Mayo Clinic and other locations.
[1997, HTML, 6.2Mb, www.epa.gov/seahome/ mercury.html]

Ground Water Primer

This HTML update of our original ground water program educates users about the nature of ground water and the principles of ground water protection. It contains a detailed introduction to hydrogeology, information on numerous drinking water contaminants, and a section on what you can do to protect your ground water. You can learn about ground water protection programs in EPA and other government agencies, and find EPA contacts and hotline numbers. Aimed at the general public, this program is also a useful reference for high school earth science.
[1998, HTML, 2.7Mb, www.epa.gov/seahome/ gwprimer.html]

Household Waste Management

This HTML program teaches the user how to safely and efficiently manage waste, and particularly hazardous waste, in the home. Users can visit a 'virtual house' and choose extended discussions of the many products they might encounter there. Safe homemade alternatives are presented and evaluated. An enormous state-by-state database of mail, telephone, and Internet contacts puts users in touch with a wealth of free downloadable publications. Includes over 30 quizzes and activities for K-12 students, sorted by grade level.
[1997, HTML, 8Mb, www.epa.gov/seahome/ hwaste.html]

Environmental Planning for Small Communities

This program offers a complete one-stop introduction to a wide range of environmental issues and decisions that affect small to medium-sized communities. It offers communities the chance to judge their own needs and preferences, and to make informed decisions on their own. Major sections cover:

1. Environmental laws and regulations
2. Self-assessment
3. Planning and comparative risk analysis
4. Financial tools and financial self-analysis

5.   Case studies
6.   Contact and information directory

Each section includes interactive tools, such as a notebook tool to fill in and save survey forms and keep notes. The program combines and integrates numerous publications from Federal agencies and States like Iowa, Minnesota, Montana, and Utah. The result is a user-friendly product that combines the virtues of an encyclopedia and a Swiss army knife!
[1998, Win 95, 40Mb, www.epa.gov/seahome/trilogy.html]

Chemical Contamination in Fish

We have produced a Windows update of the original FISH program. It contains video clips illustrating concepts such as concepts such as bio-accumulation, and new photos and video of target species. Included are an updated list of contaminants from 1997 guidance, as well as references to an online database of fish advisories and State contacts.
[1997, Win 95, 5.5Mb + videos on CD, www.epa.gov/seahome/fish.html] *Due to its size, this program is only available on CD-ROM; see pp. 8-9 for information on Purdue CDs.*

Environmental Assessment Case Study

This program is a companion piece to the 1992 Environmental Assessment Resource Guide. It takes a real-life example of an environmental impact assessment and leads the user through the environmental assessment process. The program is enhanced with maps, photos, interviews, and simulated flyovers of the project area. The Case Study links to the Resource Guide, and contains workbook-style exercises and a notebook for the user to record notes. Together these two programs provide a solid foundation in environmental assessment.
[1997, Windows 3.1 or later, 20Mb plus video files on CD-ROM, www.epa.gov/seahome/eacase.html] *Due to its size, this program is only available on CD-ROM; see pp. 8-9 for information on Purdue CDs.*

Environmental Assessment Resource Guide (EARG)

EARG is a generic source of information to help one conduct environmental assessments of virtually any type of project. Topics covered include scoping, generation of alternatives, impact identification and analysis, mitigation, decision making, and post-decision analysis. Of particular interest are the World Bank Mitigation Tables which treat a variety of project types. SVGA photos enhance and illustrate this landmark program.
[1993, Windows 3.1 or later, 40Mb, www.epa.gov/seahome/earg.html]

Residential Energy Efficiency

This program shows effective ways to reduce home energy consumption. Topics include insulation, windows, doors, weatherstripping, and caulking. The expert system feature allows users to calculate how much they will save by making their homes more energy efficient. After you enter information about your home and the energy-saving changes you intend to make, the program uses local utility and climate data to calculate your savings in money, energy, and reduction of pollutants.
[1996, Windows 3.1 or later, 35Mb, www.epa.gov/seahome/energy.html]

Electronic Wetlands Herbarium

1993 Midwest Edition
A detailed look at the plants typical of 11 different wetland types from bog to wet prairie. Users can explore a list of species found in each type of ecosystem. Entries give detailed botanical information as well as an identification quality photograph of the plant.
[1993, Windows 3.1 or later, VGA and SVGA versions available: 30-47Mb, www.epa.gov/seahome/wetherb.html]

1995 Update for Continental USA
The same detailed information as the 1993 edition, but structured to help identify plant specimens, and expanded to include species found throughout the lower forty-eight States. Users answer a series of questions about their specimen to narrow down their choices to a small list.
[Due to its size, this program is only available on the Purdue CD-ROM Vol. 1; see pp. 8-9 for information on Purdue CDs.]

Visit our website at **www.epa.gov/seahome** for free downloads and the most up-to-date information.

DOS Programs (Knowledge Pro) ∗= Web version available	
Agriculture	
Agricultural Pollution Prevention AGPP, 1991, 8Mb www.epa.gov/seahome/agpp.html	Shows how farmers can save money and reduce pollution by sensible use of fertilizers, pesticides and herbicides.
Best Management Practices for Soil Erosion EROSION, 1991, 2.7Mb www.epa.gov/seahome/erosion.html	Best management practices & structural techniques to control soil erosion.
Fertilizer Storage & Handling Practices on the Farm FARMFERT/SPANFERT, 1991, 1.2Mb, www.epa.gov/seahome/farmfert.html ∗ www.epa.gov/seahome/spanfert.html	Overview of fertilizer handling and storage, risk assessment section, recommendations for correcting storage problems. English/Spanish
Petroleum Storage Practices on the Farm FARMFUEL, 1992,1.3Mb www.epa.gov/seahome/farmfuel.html	Overview of proper fuel storage, risk assessment section gives recommendations for correcting storage problems.
Pesticide Storage & Handling Practices on the Farm FARMPEST/SPANPEST, 1991, 1.6Mb www.epa.gov/seahome/farmpest.html ∗ www.epa.gov/seahome/spanpest.htm	Overview of pesticide handling and storage, risk assessment section, recommendations for correcting storage problems. English/Spanish
Soil and Geologic Site Evaluation FARMSITE, 1991, 0.9Mb www.epa.gov/seahome/farmsite.html	Overview of protecting ground water: roles of soils, geology, depth to water table. Risk assessment section for contamination potential.
Milking Center Wastewater Treatment MILKING, 1993, 2.9Mb www.epa.gov/seahome/milking.html	Design milking facilities to receive, treat, safely dispose of wastewater. Risk assessment & improvement suggestions.
Worker Protection Standard 1995 PESTREGS, 1995, 0.9Mb www.epa.gov/seahome/pestregs.html	Pesticide applicator regulations: search for information on workers, handlers, ag employers, handler employers, owners.
Livestock Waste Storage WASTE, 1993, 4.5Mb www.epa.gov/seahome/waste.html	Manure as potential water pollutant. Collection, stabilization, storage, application. Risk assessment & improvement suggestions.
Livestock Yards Management YARDS, 1993, 4.5Mb www.epa.gov/seahome/yards.html ∗	Manure types, management systems for different animals. Risk assessment for water contamination potential, improvement suggestions.
Human Health, Risk, Pollution Prevention	
RCRA Boiler & Industrial Furnace Regulations BIF, 1996, 1.7Mb www.epa.gov/seahome/bif.html	Understand the applicability, terms, technology and requirements of the BIF rule which regulates the burning of hazardous waste in boilers and industrial furnaces (BIFs)
RCRA Corrective Action Process CAP, 1995, 3.5 Mb www.epa.gov/seahome/cap.html	Corrective action for handling hazardous wastes: interim & stabilization measures, QA plans, health & ecological assessment, remediation technologies, public participation, statutory authorities.
Comparative Risk Assessment COMPRISK, 1995, 9.5Mb www.epa.gov/seahome/comprisk.html	Methodology identifies greatest environmental risks and prioritizes environmental problems. History, methodology, case studies.

DOS Programs (Knowledge Pro) ∗= Web version available	
Indoor Air Quality INDOOR, 1995, 7.5Mb www.epa.gov/seahome/indoor.html	Pollutant sources, health risks, how to reduce pollution levels. Building cross-sections offer pollutant tours of typical home or office.
Lead in the Environment LEADENV/SPANLEAD, 1994, 3Mb www.epa.gov/seahome/leadenv.html ∗ www.epa.gov/seahome/spanlead.html	Testing children for lead poisoning, sources of lead, health effects, techniques for reducing exposure at home. English/Spanish.
Stratospheric Ozone Depletion OZONE, 1995, 6Mb www.epa.gov/grtlakes/seahome/ozone.html	Causes and effects of ozone depletion, ozone hole, greenhouse effect, and how an individual can help prevent ozone depletion.
Pollution Prevention PREVENT, 1996, 8.6Mb www.epa.gov/seahome/prevent.html	Pollution Prevention Act of 1990 addresses P2 in industry, agriculture, energy, government, and consumer sectors. Case studies.
Water	
Municipal Pollution Prevention Diagnostic Planner CMAR, 1992, 3.3Mb www.epa.gov/seahome/cmar.html	User supplies WWTP operation & maintenance info (influent loadings, failures/upsets); program rates potential problems, creates report.
UIC Class V Injection Wells INJECT, 1993, 3.3Mb www.epa.gov/seahome/inject.html ∗	Class V injection wells, why they exist, why they may pose a danger to the environment, their safe operation and maintenance.
Water Efficient Landscape Planner LANDSCP/SPANLAND, 1991, 2.1Mb www.epa.gov/seahome/landscp.html www.epa.gov/seahome/spanland.html	Water efficient landscaping: basics of landscape planning, select most appropriate plants for homeowners. English/Spanish
Lead in Drinking Water LEADDW, 1991, 1 Mb www.epa.gov/seahome/leaddw.html	Answers questions about dangers of lead in drinking water, gives techniques for reducing lead exposure.
Onsite Waste Disposal with Septic Systems ONSITE, 1991, 2Mb www.epa.gov/seahome/onsite.html ∗	Basics of on-site treatment: septic tanks, drainfields, mounds, water conservation. Treatment, design, and siting, soil basics.
Private Water Systems PRIVATE/SPANPRIV, 1991, 5.6Mb www.epa.gov/seahome/private.html ∗ www.epa.gov/seahome/spanpriv.html	Design and construction of private drinking water systems (wells and piping). English/Spanish.
Surface Water Education System SURFWAT, 1992, 3.6Mb www.epa.gov/seahome/surfwat.html	Importance, quantity, and distribution of surface water, and how it can become contaminated. Agricultural best management practices.
Alternatives for Unsewered Communities UNSEWER, 1992, 6.2Mb www.epa.gov/seahome/unsewer.html	Facilities planning for small communities: needs documentation, alternatives, selection, treatment management & implementation.
Residential Water Conservation Techniques WATCON/SPANCON, 1991, 3.2Mb www.epa.gov/seahome/watcon.html www.epa.gov/seahome/spancon.html	Save water inside and outside the house using water efficient devices. Calculates retrofitting savings. English/Spanish.

DOS Programs (Knowledge Pro) ∗= Web version available	
Wellhead Protection WELLHEAD, 1994, 3Mb www.epa.gov/seahome/wellhead.html	Public water supply protection. Planning team, wellhead protection area delineation, contaminant source inventory, management.

How to Get the EPA/Purdue Software

From our Web site

The SEAHOME Web site features downloadable versions of all our current software programs. The files are self-extracting compressed files created using PKZIP. The URL is: **www.epa.gov/seahome**

You may have difficulty downloading files during high traffic periods. If you experience problems, please try your download again later. If problems continue, and for questions or comments, send e-mail to **reshkin.karen@epa.gov, or phone Karen Reshkin at (312) 353-6353.**

USEPA no longer fills diskette orders for the software. USEPA does not distribute the CD-ROMs.

On CD-ROM

Purdue University distributes the software on CD-ROM. There are 5 titles currently available. USEPA does not handle orders for the CDs; the only way to get a CD is from Purdue. Prices include postage and handling.

Exploring the Great Lakes - Teacher's Edition (1999)
The only way to get the "Great Lakes Adventure". Includes a teacher's guide with worksheet and suggested activities, and the "Great Lakes Atlas". Cost: $10 (USD $15 for orders outside the US). *Please specify which version you are ordering.*

Exploring the Great Lakes - Student's Edition (1999)
Featuring the "Great Lakes Adventure" (available only on CD-ROM). Also includes the "Great Lakes Atlas". No teacher's guide on this version. Cost: $10 (USD $15 for orders outside the US). *Please specify which version you are ordering.*

Environmental Hypermedia Programs, Volume III (1999)
Features 20 programs, 2 of which are available only on CD-ROM. Cost: $15 (USD $20 for orders outside the US)

Chemical Contamination in Fish*	Ground Water Primer
Decentralized On-Site Management for Treatment of Domestic Wastes	Household Waste Management
	UIC Class V Injection Wells
Environmental Assessment Case Study*	Lead in the Environment
Environmental Assessment Resource Guide	Mercury in Medical Facilities
Environmental Planning for Small Communities	Pollution Prevention
EPA Grant Writing Tutorial	On-Site Waste Disposal with Septic Systems
Farm*A*Syst Tutorials	Private Water Education System
Fertilizer Storage & Handling Practices	Residential Energy Efficiency
Livestock Manure Storage	Water-Effect Ratio for Metals
Pesticide Storage & Handling Practices	Water Quality Standards & Criteria

Environmental Hypermedia Programs, Volume II, First Edition (1998)
This CD features 11 programs, two of which are available only on CD-ROM. Cost $15 (USD $20 for orders outside the US).

Chemical Contamination in Fish	Household Waste Management
Environmental Planning for Small Communities	Mercury in Medical Facilities
Environmental Assessment Case Study	Municipal Solid Waste Factbook, Version 4
Environmental Assessment Resource Guide	Recycle City
EPA Grant Writing Tutorial	Residential Energy Efficiency (update with calculator revisions)
Ground Water Primer	

Environmental Hypermedia Programs and Water Quality Models, Second Edition (1996)
Due to the large response to Purdue's first CD-ROM in 1994, they issued a second edition in 1996. It contains over 50 programs, including modeling and calculator software, and an expanded version of the Electronic Wetlands Herbarium. Cost: $25 (USD $30 for orders outside the US).

1. ALMANAC Weed Model*
2. ANSWERS: Aerial Nonpoint Source Watershed Environmental Response Simulation*
3. SWRRBWQ: Basin Scale Model*
4. UIC Class V Injection Wells
5. Comparative Risk Assessment
6. Municipal Pollution Prevention Diagnostic Planner (CMAR)
7. RCRA Corrective Action Process
8. PITDUCT: Design of Pit Ventilation*
9. Energy Concentration Game*
10. Energy Concentration Game for Juniors*
11. Environmental Assessment Resource Guide
12. EPIC: Erosion Productivity Impact Calculator*
13. Farmstead Soil & Geologic Site Evaluation
14. Chemical Contamination in Fish (DOS)**
15. GLEAMS 2.0 : Groundwater Loading Effects of Agricultural Management Systems*
16. Groundwater Education System (DOS)**
17. Heart to Heart
18. Indoor Air Quality
19. Lead in Drinking Water
20. Lead in Schools*
21. Lead in the Environment, English & Spanish
22. Livestock Manure Storage*
23. Livestock Yards Management
24. Management of Decentralized, On-Site Systems for Treatment of Domestic Wastes*
25. Manure Management Planning (Mbudget)*
26. Milking Center Wastewater Treatment Improvements
27. Municipal Solid Waste Factbook v. 2 **
28. National Primary Drinking Water Regulations**
29. Farmstead Fertilizer Storage and Handling, English & Spanish
30. Farmstead Pesticide Storage and Handling, English & Spanish
31. Onsite Waste Disposal with Septic Systems
32. Alternatives for Unsewered Communities
33. Stratospheric Ozone Depletion
34. Pesticide Applicator Regulations**
35. Farmstead Petroleum Products Storage Practices
36. Private Drinking Water Systems, English & SpanishResidential Energy Efficiency**
37. Residential Wastewater Treatment Evaluation (RWASTE-IV) **
38. Residential Water Conservation Techniques, English & Spanish
39. Soil Erosion Best Management Practices
40. Surface Water Education
41. PIGFLOW: Swine Scheduling Program*
42. OMANAL: Troubleshooting Guide: Extended Aeration Package Plant Operational Problems, Prevention, and Control*
43. SLUDGE: Utilization of Sludge as a Plant Nutrient*
44. AMANURE: Utilization of Animal Manure as a Plant Nutrient*
45. Water Efficient Landscaping, English & Spanish
46. Well Location and Condition*
47. Wellhead Protection
48. WEPP Introduction Movie*
49. Wetlands Education System
50. Wetlands Electronic Herbarium**

Discounts: There is a $15 discount when you order the three Environmental Hypermedia CDs. (i.e. Vols. I, II, and III) for $40 ($50 outside the US). There is a bulk discount when you order any five or more CDs to ship to one address. Contact the Farm Building Plan Service for more details.

To order CDs, send a check or money order payable to "Purdue University" to the Farm Building Plan Service at the address below. Purdue regrets that they are unable to accommodate payments by electronic funds transfer (EFT) or credit card. All orders must be prepaid.

Farm Building Plan Service
Agricultural & Biological Engineering
1146 ABE Building Room 208
Purdue University
West Lafayette, IN 47907-1146

Please direct questions about your order to:
Carol M. Sikler
                phone (765) 494-1174
fax (765) 494-1356
e-mail: fbps@ecn.purdue.edu

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• All programs are freeware and may be copied and given (not sold) to other interested users.
• Neither USEPA nor Purdue University accept liability for any event resulting from the use or misuse of these programs.
• Purdue University retains copyright on all software products.
• USEPA Region 5 takes no responsibility for bugs, defects or modifications in second-generation copies.

What we're working on now...

- **Oil Spill Exercise Generator** - The National Preparedness for Response Exercise Program (PREP) was created in accordance with the Oil Pollution Act of 1990. With this database-driven program, you can construct a PREP oil spill exercise or response drill in a matter of hours, and fill out checklists for use in a final evaluation report. This software is intended for State and local agencies which conduct oil spill response exercises, and the businesses and industries which must develop emergency response plans.
- **Environmental Impacts in the Lodging Industry** - Pollution prevention in the lodging industry can be positive both economically and environmentally. The program features a Virtual Hotel Tour which looks at the impacts of: energy management, solid waste controls, water conservation, air quality, purchasing management. You also can tour the virtual hotel through these areas: Restaurant and Bar, Front Desk, Housekeeping, Administrative Office, Maintenance, Recreation, Grounds and Landscaping. You'll also find self-assessment tools, case studies, contacts and references.
- **New Farm*A*Syst Programs**:
  - **Hazardous Waste Management**
  - **Well Location & Condition**
  - **Silage Storage**
  - **Livestock Manure Handling**
  - **Household Wastewater Treatment**
- **HTML Adaptations of Farm*A*Syst Programs:**
  - **Fuel Storage & Handling**
  - **Soil & Geologic Site Evaluation**
  - We are also working on adding interactive risk assessment questionnaires to the online Farm*A*Syst programs, and adding the calculator to Onsite Waste Disposal with Septic Systems.
- **Private Pesticide Applicator Training** Module 1: Pesticide Safety
- **Environmental Management of the Great Lakes** - To teach high school students about environmental issues related to the Great Lakes. Encourage participation in volunteer monitoring and restoration projects.
- **Spanish translations**:
  - **UIC Class V Injection Wells**
  - **Pesticide Applicator Regs** (Worker Protection Standard)
  - **Livestock Manure Storage**
  - **Livestock Manure Management**
- **Mercury in Buildings** - Why mercury matters, how to reduce mercury releases, what to do if there's a mercury spill, what problems exist in different types of buildings, and what devices contain mercury. For demolition contractors, buidling contractors, and building owners.
- **Beneficial Lawn Care & Chemical Management** - If you're starting a new lawn, you'll find help for selecting a type of grass and preparing/planting your seedbed. If your interest is maintaining your lawn, we offer information on pest and disease control (including integrated pest management), fertilization and irrigation.
- **Big River: The Upper Mississippi**
- **Biodiversity Around the Great Lakes**
- **Children's Environmental Health**
- **Urban Sprawl**